BIOLOGICAL SCIENCES

What can I do with this degree?

AREAS

EMPLOYERS

STRATEGIES

BIOTECHNOLOGY

Research and Development Laboratory Testing Education Colleges and universities
Pharmaceutical companies
Agricultural industry including fertilizer
manufacturers and animal and plant breeding

and production
Federal and state government laboratories and agencies

Industry, particularly biotechnology firms

Become proficient using laboratory equipment and computers.

Acquire a Ph.D. for college and university teaching and advanced positions in research, development, and management.

Take additional courses in chemistry, physics, mathematics.

Complete an undergraduate laboratory research project with a professor.

GENETICS

Research and Development related to:

Animals Plants Humans

Genetic Counseling

Education

Colleges and universities
Pharmaceutical companies

Large producers of seed, livestock, and poultry Government laboratories such as:

Department of Agriculture
Fish and Wildlife Service
National Institutes of Health

Biotechnology industry

Hospitals and medical centers

Acquire a broad background in sciences, mathematics, and computer technology.

Obtain a Ph.D. for teaching and advanced positions in research and management.

Earn a master's degree from an accredited program for genetic counseling.

Complete an undergraduate research project with a professor.

Find a related internship with an organization in the area of your interest.

MICROBIOLOGY

Research and Development Education Quality Control Colleges and universities

Private research foundations

Government research laboratories and service agencies

Hospitals and public health facilities Agricultural experiment stations

Food, chemical, pharmaceutical, and cosmetic companies

Industry including wood products, paper, textiles, optical equipment, leather, and electrical equipment

Environmental and pollution control agencies

Obtain a Ph.D. for teaching and advanced research and management positions.

Develop additional competencies in chemistry, mathematics, and physics.

Take courses related to your field of interest or consider an advanced degree to specialize.

Find a related internship with an organization in the area of your interest.

Complete an undergraduate research project with a professor.

Develop strong skills using laboratory equipment and computers.

BOTANY

Education

Research and Development

Conservation

Production

Quality Control

Administration

EMPLOYERS

Colleges and universities

Medical and private research laboratories

Pharmaceutical industry

Industries and laboratories involved in production of food, textiles, chemical, and forestry products

State and federal government, especially the

Departments of Agriculture, Interior, and Health

Botanical gardens and arboretums

National and international environmental organizations

STRATEGIES

Conduct undergraduate research with professors.

Join related professional organizations.

Take courses in this specialized area or consider an advanced degree for more opportunities.

Take courses in organic chemistry, biochemistry, and physics.

Obtain a Ph.D. for teaching and advanced positions in research and management.

Complete a related internship with an organization in the area of your interest.

SYSTEMATIC BIOLOGY

Education

Research and Development

Taxonomy

Conservation

Consulting

Administration

Colleges, universities, and agricultural colleges

Federal agencies including Departments of

Agriculture and Interior

State and local agencies

Private research foundations

Museums

Botanical gardens and arboretums

Zoos and aquariums

Public health laboratories

Hospitals

National and international environmental

organizations

Earn a Ph.D. for college and university teaching and advanced research and management positions.

Develop excellent laboratory and computer skills.

Get involved with undergraduate research with professors.

Join related professional organizations.

Complete a related internship with an organization in the area of your interest.

ENTOMOLOGY

Education

Research and Development

Toxicology

Conservation

Quality Control

Colleges and universities, especially colleges of agriculture and veterinary medicine

Industry including food producers and processors, chemicals for insect control, and lumber and pulp

Chemical companies

Pest control companies

Federal and state government

Health agencies

Agricultural experiment stations

Inspection agencies and control boards

Conservation agencies

Acquire a Ph.D. for college and university teaching and advanced research and management positions.

 $Conduct \, under graduate \, research \, with \, professors. \,$

 $\label{local-condition} Join\, related\, professional\, organizations.$

Take courses in this specialized area or consider an advanced degree for more opportunities.

Complete a related internship with an organization in the area of your interest.

EMPLOYERS

STRATEGIES

MARINE AND AQUATIC BIOLOGY

Research and Development

Education

Administration

Production

Quality Control

Conservation

Federal, state, and local government

Inspection organizations

Private recreation organizations

Research laboratories

Colleges and universities

Zoos and aquariums

Fish hatcheries

National and international environmental agencies

Develop a good foundation in mathematics, physics, computer science, statistics, and chemistry.

Acquire a Ph.D. for college and university teaching and advanced research and management positions.

Obtain experience related to fishing and boating.

Complete a related internship with an organization in the area of your interest.

Take specialized courses in this area or consider an advanced degree for more opportunities.

ZOOLOGY

Animal Care/Training

Research and Development

Conservation

Administration

Education

Wildlife preserves and parks

Zoos, aguariums, and other collections of animals

Museums

Research organizations

Pharmaceutical, chemical, and agricultural

service industries

Federal, state, and local government

Colleges and universities

Veterinary hospitals

Clinics and hospitals

Obtain experience working with animals and various related laboratory equipment.

Develop a broad background in biology and other related subjects such as chemistry, physics, mathematics, and statistics.

Obtain a Ph.D. for teaching and advanced research and management positions.

Complete a related internship with an organization in the area of your interest.

A zoological background is good preparation for a career in veterinary science or medicine, but an advanced degree is also required to practice.

BIOMEDICAL

Physiology

Biophysics

Biochemistry

Pharmacology

Immunology

Pathology

Research and Development

Education

Quality Control

Colleges and universities

Professional schools including colleges of pharmacy, dentistry, medicine, veterinary medicine, and agriculture

Clinics and hospitals

Private research foundations

Pharmaceutical companies

Federal laboratories and regulatory agencies

Independent testing laboratories

Public health departments

Agricultural experiment stations

Industrial laboratories including chemical, petroleum,

food processing, drug, and cosmetic

manufacturers

Obtain a Ph.D. for college and university teaching and advanced research positions.

Acquire a background in physics, organic and physical chemistry, mathematics, and anatomy.

Take courses in area(s) of specialization and/or consider an advanced degrees; some may require an M.D.

Complete a related internship with an organization in the area of your interest.

BIOINFORMATICS

Research and Development Education

EMPLOYERS

Biotechnology industry
Pharmaceutical companies
Government research laboratories
Universities and colleges

STRATEGIES

Double major or minor in computer science. Acquire experience working in teams. Develop in-depth programming and relational database skills.

Learn molecular biology packages, web design, and programming skills.

Complete an internship in your area of interest.

EDUCATION

Teaching

Non-classroom Education

Universities and colleges Medical and other professional schools Public and private schools, K-12

Museums Zoos

Nature centers and parks

Certification is required for K-12 school teachers, and Ph.D. is needed in universities and colleges.

Gain experience working with students through tutoring, interning, or volunteering.

Learn to work well with all types of people. Develop excellent interpersonal and public

speaking skills.

HEALTHCARE

Medicine
Dentistry
Optometry
Podiatry
Chiropracty
Pharmacy
Veterinary Medicine
Allied Health

Occupational Therapy
Physical Therapy

Hospitals
Medical centers
Nursing homes
Private practice
Government agencies
Armed forces

Home health organizations Universities and schools Nonprofit organizations Plan to attend a medical school or other related graduate program.

Maintain an outstanding grade point average, particularly in the sciences.

Secure strong faculty recommendations.

Meet with a pre-health advisor periodically.

Join related student organizations. Demonstrate leadership abilities.

Obtain a summer job, volunteer position, or an internship in a hospital.

Develop a back up plan in case medical/graduate school admission is denied.

Consider alternative but related careers such as physician assistant and nurse practitioner.

TECHNICAL AND PHARMACEUTICAL SALES

Manufacturing firms including:
Pharmaceuticals
Animal pharmaceuticals
Laboratory equipment
Medical supplies and prostheses

Develop excellent communication and interpersonal skills.

Take courses in anatomy, pharmacology, and chemistry.

Obtain sales experience and/or a business minor. Hold leadership positions in campus organizations. Join the student American Marketing Association.

EMPLOYERS

STRATEGIES

LEGISLATION/LAW

Lobbying Regulatory Affairs Science Policy Patent Law Environmental Law Federal and state government Law firms Large corporations Acquire internships in federal or state government.

Develop excellent communication and interpersonal skills.

Acquire a Ph.D for advanced positions.

Take courses in history, political science and/or legal studies.

Earn a J.D. degree to practice law.

BIOLOGICAL PHOTOGRAPHY

Major medical, dental, and veterinary schools Research centers Federal government Museums Zoological and environmental societies Publishing houses Free-lance Acquire thorough knowledge of photographic procedures and technology.

Become skilled with medical and scientific instruments including microscopes.

Take specific courses in biological, medical, and ophthalmic photography; courses in illustration and printing are also helpful.

TECHNICAL WRITING

Writing Editing

Newspapers

Publishing companies including scientific magazines, professional journals, periodicals, textbooks, and online publishers

Medical and veterinary colleges

Take advanced courses in technical writing or journalism classes or consider a minor in either.

Develop strong writing skills and command of the English language.

Obtain an advanced degree in scientific journalism.

ILLUSTRATION

Publishing companies including scientific magazines, professional journals, periodicals, textbooks, and online publishers
Educational and scientific software companies
Medical and veterinary colleges

Double major or minor in graphic illustration.

Acquire word processing and desktop publishing skills.

Find a part-time, summer, co-op or internship position with a publisher or newspaper.

Biological Sciences, Page 6

GENERAL INFORMATION

- A Bachelor's degree will qualify one for work as a laboratory assistant, technician, technologist, or research assistant in education, industry, government, museums, parks, and gardens.
- An undergraduate degree can also be used for nontechnical work in writing, illustration, sales, photography, and legislation.
- Master's degrees allow for more opportunities in research and administration. Some community colleges will hire Master's level teachers.
- Doctoral degrees are necessary for advanced research and administrative positions, university teaching, and independent research.
- An advanced degree provides the opportunity to specialize under the different areas of the biological sciences.
- The biological sciences are good preparation for a career in healthcare such as medicine, dentistry, and veterinary science, but professional degrees and licenses are also necessary to practice in these fields.
- Learn laboratory procedures and become familiar with equipment.
- Obtain summer, part-time, volunteer, co-op, or internship experience to test the fields of interest and gain valuable experience.
- Develop strong computer, mathematics, and verbal and written communications skills.
- Join professional associations and community organizations to stay abreast of current issues in the field and to develop networking contacts.
- Read scientific journals related to your area of interest.
- Maintain a high grade point average to improve chances of graduate and professional school admission.
- Become familiar with the specific entrance exam for graduate or professional schools in your area of interest.
- Secure strong relationships and personal recommendations from professors and/or employers.
- · Consider completing a post doctoral experience after graduate school.
- Learn federal, state, and local government job application process. The federal government is the largest employer of biologists.
- Gain experience with grant writing and fundraising techniques. Often research must be funded in this manner.